Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A control method for a data transfer device that comprises a data receiver for receiving write data to be stored in a disk drive; a data control unit for transferring in block units the write data received by the data receiver to the disk drive; and a ~~cache memory~~ data storage unit for temporarily storing serial data that is read from a storage area of the disk drive,

wherein the method is performed by the data control unit and comprises the steps of:

reading the serial data from the disk drive in block units and temporarily storing this serial data in block units in the data storage unit;

comparing ~~a block of data in a destination storage area of the disk drive that is~~ a logical block address of a write destination of the received write ~~data, and~~ data with a logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit;

~~when, in response to receiving the write data,~~ when the logical block address of ~~data in the destination storage area of the disk drive that is a~~ the write destination of the received write ~~data, and~~ data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the

data storage unit compared therewith, ~~are the same,~~ updating the serial data temporarily stored in the data storage unit by means of the received write data so that the updated serial data is available to be compared to the next-received write data; and

~~when, in response to receiving the write data,~~ when the logical block address of ~~data in the destination storage area of the disk drive that is a~~ the write destination of the received write ~~data, and~~ data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit compared therewith, ~~are different,~~ generating a security code based on the serial data temporarily stored in the data storage unit and according to the order of storage areas of the disk drive, adding the generated security code to the serial data temporarily stored in the data storage unit, transferring in block units this serial data having the security code added thereto to the disk drive, reading the serial data stored in the block in the ~~destination storage area of the~~ disk drive constituting the write destination of the received write data, and updating the serial data ~~temporarily~~ thus read and stored in the data storage unit by means of the write data so that the updated serial data is available to be compared to the next-received write data.

2. (Previously presented) The control method for the data transfer device according to claim 1, wherein serial write data that is serially received by the data

receiver is not necessarily transferred to successive areas of the block in the order in which this data is received.

3. (Currently amended) A data transfer circuit, comprising:

a data receiver for receiving write data to be stored in a disk drive;

a data control unit for transferring the write data received by the data receiver to the disk drive; and

a data storage unit for temporarily storing serial data that is read from a storage area of the disk drive,

wherein:

the data control unit reads the serial data from the disk drive in block units and temporarily stores this serial data in block units in the data storage unit, and

compares ~~a block of data in a destination storage area of the disk drive that is~~ logical block address of a write destination of the received write ~~data, and~~ data with a logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit;

~~when, with respect to the received write data,~~ when the logical block address of ~~data in the destination storage area of the disk drive that is a~~ the write destination of the received write ~~data, and~~ data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit compared therewith, ~~are the same,~~ the data control unit updates the serial data temporarily stored in the data storage unit by means of the received

write data so that the updated serial data is available to be compared to the next-received write data; and

~~when, with respect to the received write data,~~ when the logical block address of ~~data in the destination storage area of the disk drive that is a~~ the write destination of the received write ~~data, and~~ data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit compared therewith, ~~are different,~~ the data control unit generates a security code based on the serial data temporarily stored in the data storage unit and according to the order of storage areas of the disk drive, adds the generated security code to the serial data temporarily stored in the data storage unit, transfers in block units this serial data having the security code added thereto to the disk drive, reads the serial data stored in the block in ~~the destination storage area of~~ the disk drive constituting the write destination of the received write data, and updates the serial data ~~temporarily~~ thus read and stored in the data storage unit by means of the write data so that the updated serial data is available to be compared to the next-received write data.

4. (Previously presented) The data transfer circuit according to claim 3, wherein serial write data that is serially received by the data receiver is not necessarily transferred to successive areas of the block in the order in which this data is received.

5. (Currently amended) A disk array device, comprising:

a host interface for receiving write data to be stored in a disk drive from an information processing device; and

a data controller that transfers in block units the write data received by the host interface to the disk drive,

wherein:

the data controller comprises a data receiver for receiving write data to be stored in the disk drive from the host interface; a data control unit for transferring in block units the write data received by the data receiver to the disk drive; and ~~a cache memory~~ data storage unit for temporarily storing serial data read from a storage area of the disk drive;

the data control unit reads the serial data from the disk drive in block units and then stores this serial data in the ~~cache memory~~ data storage unit;

the data control unit compares a logical block address of a write destination of the received write data with a logical block address of the serial data read from the disk drive and temporarily stored in the data storage unit;

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the ~~cache memory are the same~~ disk storage unit, the data control unit updates the serial data temporarily stored in the ~~cache memory~~ data storage unit by means of the write data

so that the updated serial data is available to be compared to the next-received write data; and

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the ~~cache memory are different~~ data storage unit, the data control unit generates a security code based on the serial data temporarily stored in the ~~cache memory~~ data storage unit and according to the order of storage areas of the disk drive, adds the generated security code to the serial data temporarily stored in the ~~cache memory~~ data storage unit, transfers in block units this serial data having the security code added thereto to the disk drive, reads the serial data stored in the block in ~~the storage area of~~ the disk drive constituting the write destination of the received write data, and updates the serial data temporarily stored in the ~~cache memory~~ data storage unit by means of the write data so that the updated serial data is available to be compared to the next-received write data.

6. (Previously presented) The disk array device according to claim 5, wherein the host interface is connected to the information processing device via a network; and serial write data that is serially received by the host interface is not necessarily transferred to successive areas of the block in the order in which this data is received.

7. (Currently amended) A disk array device, comprising:

a host interface for receiving write data to be stored in a disk drive from an information processing device;

a data controller that transfers in block units the write data received by the host interface to the disk drive;

a processor for exercising overall control; and

memory for storing data,

wherein:

the processor reads serial data from the disk drive in block units and temporarily stores this serial data in the memory;

the processor compares a logical block address of a write destination of the received write data with a logical block address of the serial data read from the disk drive and temporarily stored in the memory;

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the memory ~~are the same~~, the processor updates the serial data temporarily stored in the memory by means of the received write data so that the updated serial data is available to be compared to the next-received write data; and

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is different from the logical block address of the serial data read from ~~the storage area~~ of the disk drive and temporarily stored in the memory ~~are different~~, the processor generates a security code based on the serial data temporarily stored in the memory and according to the order of storage areas of the disk drive, adds the generated security code to the serial data temporarily stored in the memory, transfers this data having the security code added thereto to the disk drive, reads the serial data stored in the block ~~in the storage area~~ of the disk drive constituting the write destination of the received write data, and updates the serial data thus read and stored in the memory by means of the write data so that the updated serial data is available to be compared to the next-received write data.

8. (Currently amended) A disk array device, comprising:

a channel control unit for receiving write data to be stored in a disk drive from an information processing device;

a disk control unit that performs processing relating to the writing of data to the disk drive; and

a cache memory for storing data that is exchanged between the channel control unit and the disk control unit,

wherein:

the channel control unit comprises a data receiver for receiving the write data; a data control unit for transferring in block units the write data received by the data receiver to the cache memory; and a data storage unit for storing serial data received from a storage area of the disk drive;

the ~~data~~ disk control unit reads serial data stored in the disk drive in block units from the cache memory and then temporarily stores this serial data in the data storage unit;

the disk control unit compares a logical block address of a write destination of the received write data with a logical block address of the serial data read from the cache memory and temporarily stored in the data storage unit;

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are the same~~, the data control unit updates the serial data temporarily stored in the data storage unit by means of the received write data so that the updated serial data is available to be compared to the next-received write data; and

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are different~~, the data control unit generates a security code based on

the serial data temporarily stored in the data storage unit and according to the order of storage areas of the disk drive, adds the generated security code to the serial data temporarily stored in the data storage unit, transfers this serial data having the security code added thereto to the cache memory, reads the serial data stored in the block ~~in the storage area~~ of the disk drive constituting the write destination of the received write data from the cache memory, and updates the data thus read and stored in the data storage unit by means of the write data so that the updated serial data is available to be compared to the next-received write data.

9. (Previously presented) The disk array device according to claim 8, wherein the channel control unit comprises an interface, which is connected to the information processing device via a network and receives the write data;

the data receiver receives the write data from the interface; and

serial write data that is serially received by the interface is not necessarily transferred to successive areas of the block in the order in which this data is received.

10. (Currently amended) A disk array device, comprising:

a channel control unit for receiving write data to be stored in a disk drive from an information processing device;

a disk control unit that performs processing relating to the writing of data to the disk drive; and

a cache memory for storing data that is exchanged between the channel control unit and the disk control unit,

wherein:

the disk control unit comprises a data read unit, which reads the write data from the cache memory, a data control ~~unit,~~ unit which transfers in block units the write data read by the data read unit to the disk drive; and a data storage unit for storing serial data received from a storage area of the disk drive;

the ~~data~~ disk control unit reads the serial data from the disk drive in block units and then temporarily stores this serial data in the data storage unit;

the disk control unit compares a logical block address of a write destination of the received write data with a logical block address of the serial data read from the disk drive and temporarily stored in the data storage unit;

~~when, with respect to the write data read from the cache memory, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are the same~~, the data control unit updates the serial data temporarily stored in the data storage unit by means of the write data read from the cache memory so that the updated serial data is available to be compared to the next-received write data; and

~~when, with respect to the write data read from the cache memory, a block of data in said storage area of the disk drive and~~ when the logical block address of the

write destination of the received write data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are different~~, the data control unit generates a security code based on the serial data temporarily stored in the data storage unit, adds the generated security code to the serial data temporarily stored in the data storage unit before transferring this serial data having the security code added thereto to the disk drive, reads the serial data stored in the block ~~in the storage area~~ of the disk drive constituting the write destination of the received write data, and updates the data thus read and stored in the data storage unit by means of the write data so that the updated serial data is available to be compared to the next-received write data.

11. (Currently amended) A control method for a data transfer device that comprises a data receiver for receiving write data to be stored in a disk drive; a data control unit for transferring in block units the write data received by the data receiver to the disk drive; and a data storage unit for temporarily storing serial data that is read from a storage area of the disk drive,

wherein the method is performed by the data control unit and comprises the steps of:

reading the serial data from the disk drive in block units and temporarily storing this serial data in block units in the data storage unit;

comparing a logical block address of a write destination of the received write data with a logical block address of the serial data read from the disk drive and temporarily stored in the data storage unit;

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is the same as the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are the same~~, updating the serial data temporarily stored in the data storage unit by means of the received write data, and transferring the updated serial data to the disk drive; and

~~when, with respect to the received write data, a block of data in said storage area of the disk drive and~~ when the logical block address of the write destination of the received write data is different from the logical block address of the serial data read from ~~the storage area of~~ the disk drive and temporarily stored in the data storage unit ~~are different~~, generating a security code based on the serial data stored in the data storage unit and according to the order of storage areas of the disk drive, adding the generated security code to the serial data temporarily stored in the data storage unit, transferring in block units this serial data having the security code added thereto to the disk drive, reading the serial data stored in the block ~~in the storage area~~ of the disk drive constituting the write destination of the received write data, and updating the data thus read and stored in the data storage unit by means

of the write data so that the updated serial data is available to be compared to the next-received write data.

12. (Previously presented) The control method for the data transfer device according to claim 11, wherein serial write data that is serially received by the data receiver is not necessarily transferred to successive areas of the block in the order in which this data is received.